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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------------|-------------|----------------------|---------------------|------------------|
| 10/645,911 | 08/22/2003 | Hisatsugu Kurita | 047297-0137 | 8557 |
| 22428 | 7590 | 08/03/2006 | EXAMINER | |
| FOLEY AND LARDNER LLP | | | KORNAKOV, MICHAEL | |
| SUITE 500 | | | | |
| 3000 K STREET NW | | | ART UNIT | |
| WASHINGTON, DC 20007 | | | PAPER NUMBER | |
| | | | 1746 | |

DATE MAILED: 08/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/645,911

Applicant(s)

KURITA ET AL.

Examiner

Mikhail Kornakov

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. By Applicants amendment of 05/31/2006 claims 6-10 are cancelled. Claim 1 is amended to include the limitation that the oxidizing step of the wafer with ozonated water takes place on the previously annealed wafer.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakajima
4. Nakajima discloses a method for cleaning a silicon wafer (abstract). The method consists of cleaning the wafer with ozone water (hydro cleaning), treating the wafer with hydrofluoric acid, and, as a final step, cleaning the wafer with ozone water, as denoted for the process (B) (0094). The concentrations of ozone water and hydrofluoric acid are within the claimed ranges ((0092), (0161), (0122)). Since the final step in the method of Nakajima is ozone water treatment, the oxide film is inherently present on the surface of the wafer after such final treatment with ozone water.

With regard to the microroughness of the cleaned silicon wafer, as per the instant claim 1, it is axiomatic that one who performs the steps of the known process must necessarily produce all of its advantages. Mere recitation of a newly discovered function or property that is inherently possessed by things in the prior art does not cause a claim drawn to these things to distinguish over the prior art, consult *In Re Leinoff v. Louis Milona & Sons, Inc.*, 220 USPQ 845 (CAFC 1984).

With regard to oxidizing the annealed wafer, in [0030] Nakajima teaches that, according to one aspect of the invention, the following processes can be applied an

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arbitrary number of times and in a **non-specified order**: hydrofluoric acid processing as a **laser annealing preprocess**, oxidation processing, heat treatment, and **laser annealing**. FIG. 1B and corresponding description show some characteristics for TFT devices, wherein the active layers are: a crystalline semiconductor film in which hydrofluoric acid processing (HF processing) is performed after cleaning with ozone water (hydro cleaning) as a laser annealing preprocess (Process A); and a crystalline semiconductor film in which another ozone water processing (hydro cleaning) is performed additionally after the hydrofluoric acid processing (Process B), respectively. Each of the Process A and Process B is performed as the preprocess of the laser annealing, in the Step 3 (FIG. 1A).

Thus, all the limitations, including the new limitation of the instant claim 1, are met by Nakajima.

Response to Arguments

5. Applicant's arguments filed 05/31/2006 have been fully considered but they are not persuasive. Applicants submit that Nakajima fails to disclose oxidizing an annealed silicon wafer with ozonized water. For this reason alone, Applicants submit that the outstanding rejection under 102 is improper and should be withdrawn.

In response to this, it is noted that Nakajima teaches oxidizing an annealed wafer byperforming the following processes an **arbitrary number of times** and in a **non-specified order**: hydrofluoric acid processing as a **laser annealing preprocess**, oxidation processing, heat treatment, and **laser annealing** (see 0030), wherein the

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oxidation process may be performed utilizing ozone water processing [See the specific processing described in 0099].

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Other prior art reference cited in PTOL-892 show the oxidation of annealed wafers and their further cleaning.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mikhail Kornakov whose telephone number is (571) 272-1303. The examiner can normally be reached on 9:00 - 5:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571) 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read "M. Kornakov", with a long, sweeping horizontal line extending to the right.

Mikhail Kornakov
Primary Examiner
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07/ 29/06